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DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF CONSERVATION

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September 17, 2021

Monique Harden  
Deep South Center for Environmental Justice  
3157 Gentilly Blvd, #145  
New Orleans, LA 70122

RE: Class VI USEPA Primacy Application Comment

Dear Ms. Harden:

Thank you for providing comments on the Class VI USEPA Primacy Application. Please see our responses below.

**Comment I LDNR Response:**

New details on the use of the EJSCREEN have been included in the revised program description. As a potential screening tool for pre-decisional use, EJSCREEN can be used as a starting point for conducting further analysis. However, EJSCREEN will not be the definitive tool for a screening-level analysis. Peer-reviewed literature, stakeholder input, and other available forms of data may be used to evaluate the need for the applicant to conduct a more in depth environmental justice (EJ) analysis. Further requirements regarding EJ analysis methods and forms of enhanced public outreach will be detailed in future guidance.

**Comment II LDNR Response:**

Per LAC 43:XVII.603.H, the Commissioner of Conservation has the ability to impose additional application requirements ensure that the project will be protective of the underground source of drinking water (USDW) as well as the health, safety, and welfare of the public. Additionally, new details regarding technical reviews have been included in the revised program description:

Technical review may incorporate information from sources such as: the most up-to-date science and findings available from peer reviewed public literature; data and information presented at symposiums or conferences; procedures or recommended practices from the US EPA, qualified national laboratories, or published standards; and the most up-to-date versions of EPA-published guidance documents.

Technical review of the permit application will determine if applicants will need to provide additional evaluation data or monitoring plans beyond that required in 29-N-6. Evaluation data that is not required in the regulations but may be required prior to permit approval could include evaluation methods such as

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magnetic drone surveys to quantify any mis-located or unpermitted wells, geophysical data to support geologic interpretation, groundwater information to support hydrogeological interpretation, or other methods deemed necessary by the Commissioner. Additional monitoring plans may also be required by the Commissioner to monitor microseismicity, groundwater, reservoir pressures or plume extent, or any other plans deemed necessary based on a site-specific technical evaluation.

It is the mandate of the Underground Injection Control (UIC) program to protect the USDW, however, this does not limit or alter the duty of the Louisiana Department of Natural Resources (LDNR) pursuant to the Louisiana constitution to protect the health, safety, and welfare of the people. The regulations intended to protect the USDW also serve towards that purpose. And as noted above, the commissioner has the authority to impose additional application requirements ensure that the project will be protective of the USDW as well as the health, safety, and welfare of the public.

With regards to specific example of “the solvent properties of carbon dioxide” referenced in the comment, this is addressed in several ways. Applicants are required to assess the compatibility of the proposed carbon dioxide stream with injection zone fluids and minerals in the injection and confining zones (LAC 43:XVII.3619.A.3.c). Reactive transport modeling (chemical reactions between constituents) may be required by the commissioner as part of the computational modeling for multiphase flow used for AOR boundary delineation.

#### **Comment III LDNR Response:**

LAC 43:XVII.3603.F, which corresponds to the federal rule at 40 CFR 144.51(I)(5), allows for the owner or operator to petition the commissioner for the expansion of the areal extent of Class II aquifer exemptions for the purpose of Class VI injection with the concurrence of the EPA. However, the Office of Conservation (LOC) currently has no plans to permit the expansion of any existing aquifer exemptions. The removal of this provision will be considered in future rule making.

#### **Comment IV LDNR Response:**

The requirements for iterative site characterization are referenced at several points throughout LAC 43:XVII Chapter 36 and are at least as stringent as the federal requirements. Updated site characterization must be submitted at multiple points through the lifespan of an injection project:

- In fulfillment of all requirements for a Class VI permit application prior to well construction (LAC 43:XVII.3607.C); and
- Prior to well operation (LAC 43:XVII.3619).

Robust site characterization is a critical and required component of the process of area of review (AOR) boundary delineation. After injection has commenced, owners or operators must reevaluate the AOR using site characterization, monitoring and operational data, and computational modeling at least every five years or as warranted by monitoring and operational conditions (LAC 43:XVII.3615.C.2 et seq.).

If a permit is modified under the conditions laid out in LAC 43:XVII.3613.C, a draft permit will be prepared and will be subject to all applicable procedures (LAC 43:XVII.3613.C.4). These procedures shall include being publicly noticed and made available for public comment (LAC 43:XVII.3611.C.4).

The potential presence of faults and fractures must be addressed on a site-by-site basis. Applicants are required to identify and characterize any faults that may transect the confining zone within the AOR. They must demonstrate that the confining zone is free of and faults or fracture that may interfere with containment of the injected carbon dioxide stream or reservoir fluids (LAC 43:XVII.3615.A.2). Additionally, the computational

modeling completed as part of the AOR boundary delineation is required to account for any potential migration through faults and fractures (LAC 43:XVII.3615.B.3.a.iii).

While not strictly relevant to the Class VI primacy application, LDNR would like to address the assertion that a Princeton University study has found Louisiana to be unsuitable for geologic storage. The 2020 interim report of Princeton's "Net-Zero America" does not claim that Louisiana is unsuitable for geologic storage of carbon dioxide. Section "Pillar 4: CO2 capture, transport, usage, and geologic storage" provides an overview of "practicable storage capacities" as well as pipeline networks and estimated costs. The section does not include any claims regarding site suitability.

Section "Pillar 2: Clean electricity – Clean firm electricity sources" includes environmental and cultural suitability mapping with regards to modern siting constraints for thermal power plants. However, this section does not include any analysis of siting for geologic storage or make any claims regarding site suitability for the same.

Construction projects in coastal zones and wetlands are subject to permitting from the requisite state and federal agencies and are outside the scope of review of LOC. However, applicants are required to submit a list of the permits they have received for their proposed injection project. Qualified technical staff will verify that all required state and federal permits for site construction have been applied for before LOC issues a permit-to-construct.

The issuance of a Coastal Use Permit by LDNR Office of Coastal Management serves as a determination of consistency with Louisiana's Coastal Zone Management Program.

#### **Comment V LDNR Response:**

Analysis of the physical and chemical characteristics of the proposed carbon dioxide stream must be included for an application to be considered complete. These analyses would be subject to public access at the time of public notice for the application. Testing and monitoring requirements will be mandatory for every project, regardless of carbon dioxide stream source. Analyses, proposed testing and monitoring plans, and monitoring data submitted by the owner or operator will be reviewed by qualified technical staff.

Section 4.2 of the "Underground Injection Control (UIC) Program Class VI Primacy Manual for State Directors" indicates that a demonstration of access to contractor support is acceptable as part of agency organizational structure during the primacy application process. Any technical work by contractor would be completed under the supervision and review of a qualified technical staff member.

Regarding staff education and experience, documentation such as personal resumes and work histories are not required components of the primacy package. However, these qualifications and staff competency are demonstrated in several ways:

- Annual reviews conducted by EPA demonstrate LOC Injection and Mining Division's (IMD) successful administration of the UIC program;
- Staffers must meet minimum qualifications in education and professional experience to work in the UIC program, including a baccalaureate degree with a major in engineering, geology, geosciences, earth and environmental science, or geophysics with at least one year of professional experience for entry level technical positions;
- Staff performing engineering duties are required to either be or to work under a licensed professional engineer (P.E.) in good standing with the Louisiana Professional Engineering and Land Surveying Board; and

- Staff performing geologic duties are required to either be or to work under a licensed professional geoscientist (P.G.) in good standing with the Louisiana Board of Professional Geoscientists.

### Comment VI LDNR Response:

The comment references several audits of LDNR programs conducted by the Louisiana Legislative Auditor (LLA). None of the referenced audits refer to or evaluate the regulation, enforcement, or financial services related to injection wells. They offer no assessment of IMD's effectiveness in implementing the UIC program. As such, they are not relevant to LDNR's application for Class VI primacy.

LDNR agrees that effective regulation of the UIC program is important in preventing operators from abandoning their wells. With regards to existing UIC primacy, Section V.J of the *Memorandum of Agreement Addendum 1* describes how the EPA conducts an evaluation of IMD's implementation of the UIC program at least annually. While orphan injection wells are not the primary focus of these evaluations, the EPA reviews key metrics and actions that reflect IMD's ability to effectively regulate injection wells and operators.

This review determines "consistency with the program submission, SDWA (Safe Drinking Water Act) applicable regulations, and applicable guidance and policies." To this end, IMD is assessed on a number of performance factors including:

- satisfaction of EPA reporting requirements;
- completion of proposed compliance activities;
- financial reporting;
- successful responses to regulatory and technical issues;
- implementation of effective quality management and assurance systems; and
- working to maintain the levels of technical knowledge and staffing required for implementation of a highly technical program like UIC.

Based on IMD's performance, EPA has never recommended that LDNR's existing primacy for Class I, II, III, and V injection wells under SWDA Section 1422 be altered or revoked.

Owners or operators will be required to maintain qualifying instruments of financial responsibility that are sufficient to cover the costs of corrective action, injection well plugging, post-injection site care and site closures, and emergency and remedial response (LAC 43:XVII.3609.C.4.a.i).

Section 4.2 of the *Underground Injection Control (UIC) Program Class VI Primacy Manual for State Directors* provides a detailed breakdown of the EPA's expectations for documentation of IMD's capability to administer Class VI injection wells. EPA will make the final determination on IMD's ability to undertake the program based on the information provided in the primacy application. This includes the increases in funding, staffing levels, and ability to contract technical subject matter experts on an as needed basis as detailed in the Program Description

Regarding the reference to the Bayou Corne sinkhole and associated monitoring requirements for salt cavern wells, these injection wells are regulated under LAC 43:XVII Chapter 3 – Hydrocarbon Storage Wells in Salt Dome Cavities and LAC 43:XVII Chapter 33 – Class III (Solution Mining) Injection Wells. The regulatory requirements for these wells were updated after the occurrence of the Bayou Corne sinkhole and are not relevant to the LDNR's application for Class VI primacy.

Additionally, owners or operators of Class VI wells will be required to continue monitoring after injection activities cease as part of the post-injection site care and closure plan (LAC 43:XVII.3633.A.1). As noted above, operators will be required to hold financial security that is sufficient to costs of corrective action, injection well plugging, post-injection site care and site closures, and emergency and remedial response. Exemptions will not be granted.

As a general note, multiple commenters have stated or implied that LOC should not pursue primacy over Class VI geologic sequestration of carbon dioxide or that it should simply not be allowed in Louisiana. As civil servants, we are answerable to the citizens of this state and we take your comments and concerns seriously. However, it should be noted that carbon dioxide sequestration using such wells is a legal activity within both state and federal legal frameworks, and the LOC does not have the authority to unilaterally disallow the activity – that would be a matter for state or federal legislators – it can only provide and enforce regulations to make such activities as protective as possible for human health and the environment.

In the 2009 Regular Legislative Session of the Louisiana Legislature, the Louisiana Geologic Sequestration of Carbon Dioxide Act (Act 517), found at RS 30:1101-1111, was passed and subsequently signed into law by the governor. In the 2021 Regular Legislative Session, the legislature passed Act 326, which was subsequently signed into law by Governor Edwards. Act 326 provided for changes to the original Geologic Sequestration of Carbon Dioxide Act to facilitate the application to the EPA for primacy as well as facilitate future permitting and regulation of sequestration activities. In addition, if the state were not to seek primacy, this would not stop permitting of such sequestration operations. It would merely mean that the process would be handled by the EPA under its existing rules for permitting such activities – which are less restrictive for operators than those proposed by LOC.

Yours very truly,

Richard P. Ieyoub  
Commissioner of Conservation



Stephen H. Lee, Director  
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